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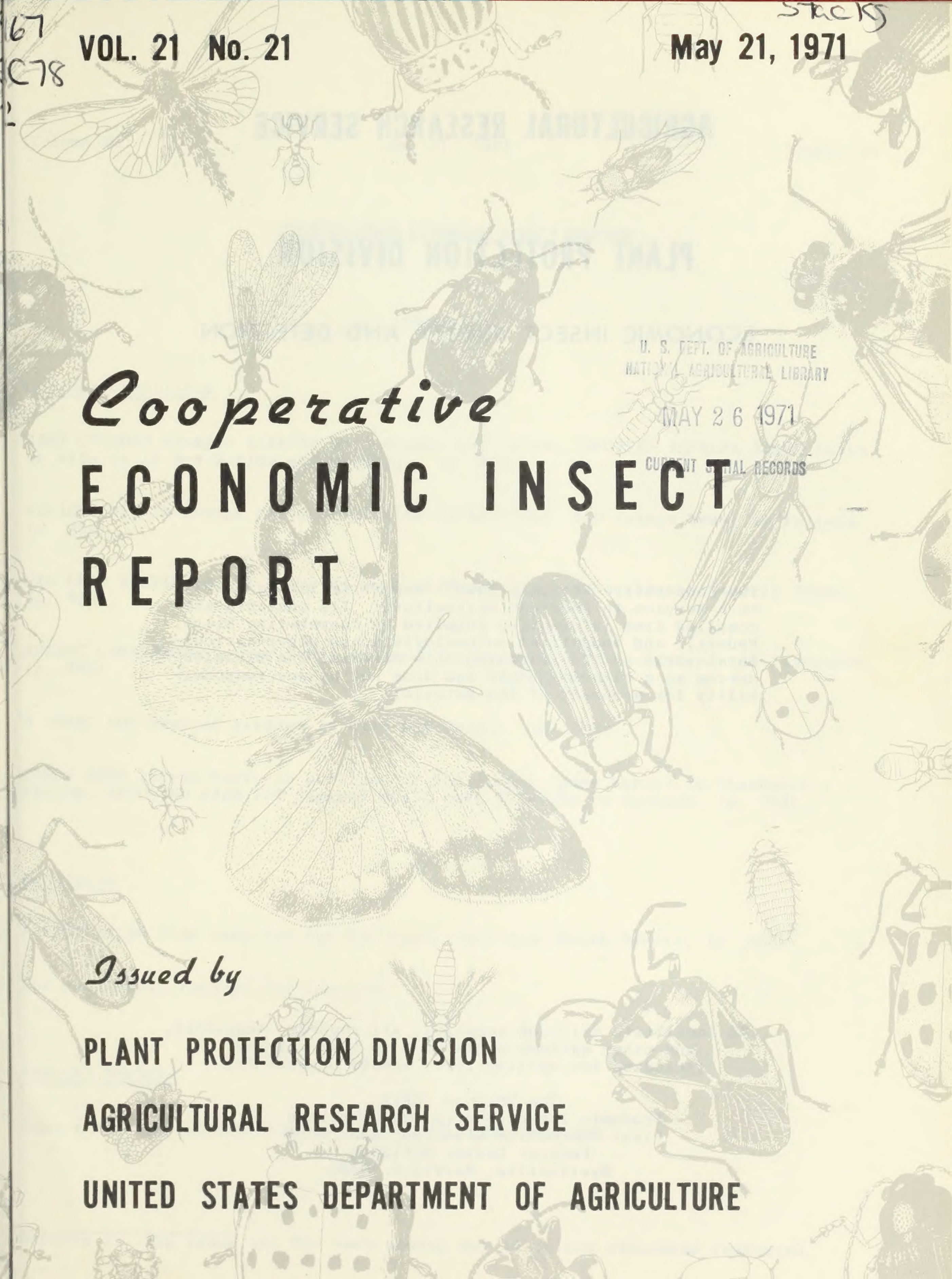

VOL. 21 No. 21 May 21, 1971

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Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PROTECTION DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

To facilitate mailroom handling, all reports, inquiries, and other matters pertaining to this release, including the mailing list, should be sent to:

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Hyattsville, Maryland 20782

Volume 21 May 21, 1971 Number 21

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

ARMY CUTWORM damaged alfalfa in Nebraska and Nevada. SPOTTED ALFALFA APHID heavy on alfalfa in New Mexico and Oklahoma. (p. 355).

ALFALFA WEEVIL damage heavy on alfalfa in Kentucky, tip damage heavy in Indiana. (p. 356).

PEA LEAF WEEVIL adults heavy on peas in Washington, declining on peas in Idaho. (p. 359).

SPRING CANKERWORM larvae heavy on shade trees in Oklahoma, Kansas, and Tennessee. (p. 361)

A GRASS BUG damaged grasses in Utah and Oregon. (p. 364).

GYPSY MOTH larvae heavy in portions of New Jersey, pose threat to blueberry fields. IMPORTED FIRE ANT damaged small corn planting in Alabama. (p. 364).

Detection

A PTEROMALID WASP reported for the first time from South Dakota. (p. 363).

For new county records see page 365.

Special Reports

Improved Traps for Capturing Boll Weevils. (pp. 367-368).

Reports in this issue are for week ending May 14 unless otherwise indicated.

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NATIONAL WEATHER SERVICE'S 30-DAY OUTLOOK

MID-MAY TO MID-JUNE 1971

The National Weather Service's 30-day outlook for mid-May to mid-June is for temperatures to average above seasonal normals in the Northeast, as well as along the gulf coast and west of the Divide. Below normal averages are indicated for the upper and middle Mississippi Valley and eastern portions of the Great Plains. Elsewhere near normal temperatures are in prospect. Precipitation is expected to exceed normal over the Northeast and from the gulf coast region to the Great Lakes. Subnormal totals are indicated for the West Coast States, the southern Plateau region and northern portions of the northern Plains. In unspecified areas near normal precipitation is expected.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the National Weather Service. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING MAY 17

HIGHLIGHTS: Generous rains ended the drought in southern Florida, parts of Texas received drought relieving showers.

PRECIPITATION: A wet weather pattern covered most of the eastern half of the Nation early in the week. Warm moist air flowing northward from the Gulf of Mexico released heavy rain as the low pressure areas and their associated fronts moved eastward. Tornadoes occured from Kansas to Texas and eastward to Mississippi. They caused a number of injuries and considerable damage to trees, power lines, mobile homes, and other property. Severe thunderstorms with hail, high winds, and heavy rains, occurred over portions of the central and southern Great Plains and the Deep South. About 5.50 inches of rain swamped Greenwood, Nebraska, in 5 hours late Monday, and more than 3 inches fell east of Lincoln, Nebraska, between Elmwood and Murcock in 45 minutes. Heavy downpours flooded fields and closed highways. Hail, ranging in size from as small as marbles to as large as grapefruit, fell in the lower Rio Grande Valley Tuesday afternoon. One hailstone weighed 12 ounces. Heavy rains deluged many localities throughout the South in the 24-hour period ending at 7 a.m. Wednesday. A locality northwest of Little Rock, Arkansas, received 5.95 inches. Weather of the week continued on page 366.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - MICHIGAN - Collected 24 moths during week ending May 10 at Lenawee County blacklight station. Cool nights reduced activity. (Newman). OHIO - Small flights at Wooster, Wayne County, on warmer evenings. Moth counts heavier than similar period in 1969 but much lower than in 1970. (Rings). VIRGINIA - Moths 50 in light trap collections week ending May 7 on Eastern Shore. (Hofmaster). MISSOURI - Larvae ranged 0-7 per square foot in wheat and barley in southwest area. Heaviest in areas of heavy growth. Mostly first and second instars. First and second instars ranged 3-9 per square foot in fescue and orchard grass in southwest area. Fields checked managed for seed production. (Hanning).

ARMY CUTWORM (Euxoa auxiliaris) - MONTANA - Infested several hundred acres of winter wheat in Cascade County. Light on 60 acres of alfalfa near Townsend, Broadwater County. (Pratt, May 7). NEVADA - Larvae generally light and scattered on seed alfalfa at Orovada, Humboldt County. Larvae ranged 3-6 per crown in 160-acre field, controls applied. (Lundahl, Rowe). WYOMING - Late instars ranged 0-2 per linear foot of wheat in Laramie County. (Parshall). NEBRASKA - Damaged established alfalfa stand and seedling corn following alfalfa near Cozad in Dawson County. No counts available. (Pearson, May 12). Averaged less than 1 per linear foot in 4 wheatfields in Hitchcock County. (Menke, May 11).

CORN EARWORM (Heliothis zea) - NORTH CAROLINA - Adults observed in Coastal Plain and Piedmont areas; larvae on corn in Columbus County. (Threat).

CORN LEAF APHID (Rhopalosiphum maidis) - TEXAS - Light to moderate in central and south-central areas. (Cole).

GREENBUG (Schizaphis graminum) - WASHINGTON - Increased and becoming more general on wheat. Ranged 1-10 per 10 sweeps of wheat beginning to head; appearing on sticky traps in Benton and Franklin Counties. (Klostermeyer). TEXAS - Light on sorghum in Hays and Caldwell Counties. (Cole). NEBRASKA - First winged migrants taken in suction trap at Lincoln, Lancaster County, April 20. (Berogan).

SPOTTED ALFALFA APHID (Therioaphis maculata) - NEW MEXICO - Scattered and heavy infestations required treatment in Chaves and Eddy Counties. Counts ranged from 10 per 25 sweeps to 3 per trifoliate leaf. (Mathews). OKLAHOMA - Moderate to heavy on alfalfa in Cleveland County. Averaged 50 per 10 sweeps in Noble County. (Okla. Coop. Sur.). KANSAS - None to light on 10 to 25-inch alfalfa in northeast district. (Bell). WISCONSIN - Ranged 1-2 per 10 sweeps of alfalfa on light soils in Crawford and Sauk Counties. (Wis. Ins. Sur.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (Ostrinia nubilalis) - SOUTH DAKOTA - Percent overwintering borer mortality by county (spot checks): Brookings 10-50, Clay 10, Lincoln 10-40, Minnehaha 40-70, Moody 0-30, Turner 10-30, Union 0-10, and Yankton 0-30. (Janes). INDIANA - No pupation observed in Bedford area of south-central district. (Huber). DELAWARE - Pupation averages 48 percent in Sussex County. First adult May 5. Adults 1 per night in blacklight traps. (Burbutis, Lesiewicz).

BLACK CUTWORM (Agrotis ipsilon) - MISSOURI - Infestations on small corn in river bottoms in east-central area. Feeding damage on 60-90 percent of plants in some fields. (Thomas).

CORN FLEA BEETLE (Chaetocnema pulicaria) - KENTUCKY - Adults damaged young corn in south-central and western areas. (Barnett). TENNESSEE - Heavy on corn in western areas. Many fields show signs of disease. Several adults per plant in Hardin County. (Turpen, Steele).

SUGARCANE BEETLE (Euetheola rugiceps) - ALABAMA - Adult damage as high as 25 percent in some fields of corn in southern Monroe County. Controls unsatisfactory. (Lemons).

SEEDCORN MAGGOT (Hylemya platura) - NEW JERSEY - Adults 310 on 3 sticky-board traps May 5-12 at Cedarville, Cumberland County. (Ins.-Dis. Newsltr.). NORTH CAROLINA - Adults heaviest in 10+ years in Duplin and Sampson County area. Fungus disease reducing numbers. Full impact not known. (Brett).

YELLOW SUGARCANE APHID (Sipha flava) - TEXAS - Light on grain sorghum in Hays and Calhoun Counties. (Cole). OKLAHOMA - Very light on young corn in Bixby area, Tulsa County. First of season. (Okla. Coop. Sur.).

POTATO APHID (Macrosiphum euphorbiae) - OKLAHOMA - Ranged 1-8 per leaf on lower leaves of 40 percent of young corn plants (12-18 inches) in Bixby area, Tulsa County. (Okla. Coop. Sur.).

SMALL GRAINS

PALE WESTERN CUTWORM (Agrotis orthogonia) - WYOMING - Larvae ranged 0-1 per linear foot of wheat in 9 Laramie County fields. (Parshall). NEBRASKA - Generally light, averaged 0.5-1 per linear foot of wheat in Hitchcock County; damage light on scattered knolls in 4 wheatfields on May 11. (Menke).

ENGLISH GRAIN APHID (Macrosiphum avenae) - MARYLAND - Increased on barley and wheat in Talbot, Dorchester, Queen Annes, and Caroline Counties. Ranged 5-20 per sweep in heaviest infested fields. Counts below economic threshold. (U. Md., Ent. Dept.).

BROWN WHEAT MITE (Petrobia latens) - NEVADA - Ranged 10-25 per leaf on additional 40 acres of winter wheat in Lovelock area, Pershing County; treated by irrigation week of May 7. (Stitt). See CEIR 21(17):292, 21(18):308, and 21(19):320. (PPD).

WIREWORMS - NORTH DAKOTA - Larvae of unspecified species (ranged 1-1.5 per square foot of wheat) reduced stands 30-35 percent in Cass County. (McBride).

TURF, PASTURES, RANGELAND

A BILLBUG (Sphenophorus venatus confluens) - OREGON - Observed in Willamette Valley orchard grass. Potential for damage greatest in fields with no previous history of infestation. (Kamm).

SOUTHERN CHINCH BUG (Blissus insularis) - TEXAS - Continues to increase in St. Augustine grass lawns in Brazos and Limestone Counties. (Green, Brown).

A LEAFHOPPER (Dikraneura carneola) - UTAH - Ranged 12-20 per 10 sweeps of grasses at Pleasant Grove, Utah County. (Knowlton, Davis).

FORAGE LEGUMES

ALFALFA WEEVIL (Hypera postica) - PENNSYLVANIA - Adults 4 per 50 sweeps of alfalfa in Centre County, no larvae. (Gesell). Counts per 50 sweeps in Dauphin County: Larvae less than 5 and adults 5. (Hower). MARYLAND - Larvae less than 2 per sweep in Queen Annes, Dorchester, Caroline, Talbot, Prince Georges, and Montgomery Counties. Populations still light throughout State. (U. Md., Ent. Dept.). VIRGINIA - Larvae light to moderate in Madison County for first time in 3 years. Some controls applied. (Grove, April 29). KENTUCKY - Larvae averaged 3,000 per 100 sweeps in untreated fields in Scott County. Damage continues heavy in most areas. Heaviest in north and northwestern areas. Loss on untreated fields 40 percent. (Barnett). OHIO - Larvae 4-5 per terminal in treated alfalfa fields in Brown County. Larvae 60 per 100 sweeps in Warren County, damage light. (Flessel). INDIANA - Tip damage 50+ percent on most alfalfa in southern district; many fields showed 80-100 percent tip damage period ending May 7. Currently, little feeding noted on alfalfa terminals in central districts north of Indianapolis. Only occasional feeding noted south of this city except in southwestern corner of southwest district; up to 80 percent of terminals showed feeding signs in Vigo and Morgan County fields. In west-central district, larvae per 100 terminals in southern districts week ending May 7 averaged: Southeast 389, south-central 443, southwest 255. (Meyer). ILLINOIS - Area of economic damage should be south of line from northern Adams County to northern Coles County. Populations heavier on western side of State than eastern. Larvae per 100 sweeps by county: Adams 930, Logan 30, Mason 335, and McLean 0. (Ill. Ins. Sur.). WISCONSIN - Larvae in first and second stage but occasional third. Populations and feeding light in areas surveyed. (Wis. Ins. Sur.).

KANSAS - *Hypera postica* larval counts per 10 sweeps by county (3 fields per county unless otherwise indicated): Marshall none; Nemaha none (2 fields); Brown 0-0.4; Doniphan 0-0.6 (2 fields); Atchison 1.2-4 (2 fields); Jefferson 0.6-1.2; Leavenworth 0.4 (1 field); and Lyon 0.2-1.6. Adults averaged 0.2 per 10 sweeps in one alfalfa field in Marshall County and 0.2 per 10 sweeps in field of red clover in Doniphan County. No other adults found. Additional new county records include Lyon, Marshall, Brown, Doniphan, Atchison, Jefferson, and Leavenworth. Determined by K.O. Bell. (Bell). OKLAHOMA - Larvae light in 2 alfalfa fields in Cherokee area of Alfalfa County. This is a new county record. Larvae heavy in Mayes County, moderate to heavy in Cleveland County. Larvae averaged 5 per 10 sweeps in Noble County. Larvae moderate in Okfuskee County, adults heavy. Adults up to 60 per square foot in Pottawatomie County. (Okla. Coop. Sur.). TEXAS - Larvae 25 and adults up to 4 per 100 sweeps of alfalfa in Denton County. Infestation in Bell County. This is a new county record. (Turney, Decker).

COLORADO - Larvae ranged 4-10 per 100 sweeps of alfalfa in Mesa and Delta Counties. (Bulla). UTAH - Adults ranged 8-25 per 10 sweeps of alfalfa and all larval stages 1-3 per sweep at Pleesent Grove, Utah County. (Knowlton, Davis). All instars moderate, some injury in "Dixie" area of Washington County (Huber); and Moab area of Grand County, lighter injury in San Juan County (Jones). WYOMING - Adults less than 1 per 10 sweeps in Goshen County. None collected in Platte or Laramie Counties. Alfalfa 4-7 inches tall. (Parshall). WASHINGTON - Adults ranged 0.2-2 per sweep of alfalfa near Pullman, Whitman County. (Akre, Johansen). OREGON - First larvae of season noted in alfalfa in Redmond area, Deschutes County. (Sterling). NEVADA - Larvae very light and scattered at Lovelock, Pershing County. Many gravid females present. (Stitt). Larvae averaged 6 per sweep in most heavily infested alfalfa at Fallon, Churchill County; infestations spotted. Adults mating; gravid females and numerous eggs present. Development 1-2 weeks behind normal. (Adams, Arnett).

CLOVER LEAF WEEVIL (*Hypera punctata*) - KANSAS - Larvae light to moderate in 3 alfalfa fields in *Riley County; most* found infected with fungus disease, probably *Entomophthora spaerosperma*. (Bell).

CLOVER ROOT CURCULIO (*Sitona hispidula*) - WASHINGTON - Adults ranged 0.2-0.4 per sweep of alfalfa near *Pullman, Whitman* County. (Akre, Johansen).

SOUTHERN CORN ROOTWORM (*Diabrotica undecimpunctata howardi*) - KANSAS - Adults ranged 0.6-3.6 per 10 *sweeps in 3 alfalfa fields in Lyon County*. (Bell).

PEA APHID (*Acyrthosiphon pisum*) - WASHINGTON - Ranged 7-20 per sweep in alfalfa seed *fields near Touchet, Walla* Walla County. *Macrosiphum creelii* comprised 15-20 percent of population. (Eves). UTAH - *Acyrthosiphon pisum* ranged 12-35 per 10 sweeps of alfalfa at Pleasant Grove, Utah *County. (Knowlton, Davis)*. Moderate in Washington County. (Huber). WYOMING - Averaged 5 per 10 sweeps of alfalfa in Goshen County. None found in Platte and Laramie Counties. (Parshall). COLORADO - Ranged 10-20 per 100 sweeps of alfalfa in Mesa and Delta Counties. (Bulla). OKLAHOMA - Heavy in alfalfa in Pawnee County, moderate in Cleveland County. Averaged 40 per 10 sweeps in Noble County. (Okla. Coop. Sur.). KANSAS - No serious infestations found in alfalfa. (Bell). MISSOURI - Ranged 20-250 per 10 sweeps of alfalfa in southwest area. Populations declining, predator counts high. (Hanning). WISCONSIN - *A. pisum* remain light, ranged 1-6 per 10 sweeps of alfalfa. Alates appearing. (Wis. *Ins. Sur.*). MARYLAND - Ranged 100-300 per sweep in Dorchester and Caroline Counties. Infestations on lower Eastern Shore above 1970 levels at this time. (U. Md., Ent. Dept.).

MEADOW SPITTLEBUG (Philaenus spumarius) - WISCONSIN - Populations above normal in Vernon, Crawford, Richland, Sauk, and northern Grant Counties. (Wis. Ins. Sur.). INDIANA - Nymphs per 100 alfalfa terminals, week ending May 7, by district: Southeast 16.9, south-central 2.7, southwest 8.6. (Meyer).

LYGUS BUGS (Lygus spp.) - NEW MEXICO - Counts per 25 sweeps of alfalfa: Nymphs 1-5 and adults 3-10 in area from Roswell to Artesia in Chaves and Eddy Counties. (Mathews).

YELLOWSTRIPED ARMYWORM (Spodoptera ornithogalli) - OHIO - Single moth in blacklight trap at Wooster, Wayne County, on May 11. Probably overwintered in protected location. (Rings).

COTTON

BOLL WEEVIL (Anthonomus grandis) - TEXAS - Remained light in Rio Grande Valley. Punctured squares heaviest (15 percent) in Edinburg area of Hidalgo County. Punctured squares ranged 0-3 percent in most fields. (Deer). In McLennan and Falls Counties, weevils in 3 of 27 fields. None on flight screens. Total of 72 weevils taken in pheromone traps near hibernation sites; total to date 817. (Cowan et al.). MISSISSIPPI - In delta counties, collected 8 weevils in 22 traps baited with pheromone wicks. Installed 64 live traps around 2 adjoining fields (1 planted, 1 unplanted) April 28; total of 60 weevils recovered to May 14. (Pfrimmer et al.). ALABAMA - Surveys for live weevils negative on 16 farms in north and central areas. (Thompson et al.). GEORGIA - Adults averaged 466 per acre in wood trash samples throughout south area; averaged 5 per grandlure trap in Randolph County. (Womack, May 8).

BOLLWORMS (Heliothis spp.) - TEXAS - In McLennan and Falls Counties, total of 102 larvae previously collected on native hosts identified H. zea. Seven larvae taken on native host identified H. virescens. Total to date on all hosts 534 H. zea and 8 H. virescens. Hosts include spiderwort, Texas star, corn, Indian paintbrush, prairie larkspur, phlox, wild foxglove, alfalfa, lizardtail, daisy, and evening primrose. (Cowan et al.). Decreased on cotton in Rio Grande Valley due to beneficial insects. Heliothis spp. egg laying very light. Infestations ranged 0-2 percent. (Deer).

CABBAGE LOOPER (Trichoplusia ni) - TEXAS - Larvae light on cotton in Rio Grande Valley. (Deer).

COTTON APHID (Aphis gossypii) - CALIFORNIA - Heavy on cotton in Pumpkin Center and Taft areas of Kern County. (Cal. Coop. Rpt.). ALABAMA - Nymphs and winged forms ranged 1-20 on young plants in fields checked in Colbert, Morgan, and Madison Counties where no systemic materials used. (Eich et al.).

COTTON FLEAHOPPER (Pseudatomoscelis seriatus) - TEXAS - Remained light in most Rio Grande Valley counties. Ranged 0-4 per 100 terminals in Lyford and Raymondville area of Willacy County. (Deer).

A PILLBUG (Armadillidium vulgare) - TEXAS - Reportedly killed stands of cotton in two 20-acre fields in McClennan County. (Cowan).

TOBACCO

TOBACCO BUDWORM (Heliothis virescens) - NORTH CAROLINA - Adults in Coastal Plain and Piedmont areas. Larvae on tobacco sets in Columbus County. (Threat).

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - NORTH CAROLINA - Adults very heavy, counts of 100+ holes per leaf (100 leaf counts), on newly set tobacco plants in Columbus and Duplin Counties. (Pleasants, Hunt).

SUGAR BEETS

SUGARBEET ROOT MAGGOT (*Tetanops myopaeformis*) - COLORADO - Adult collections in bait traps increased in Berthoud area of Larimer County; no increase noted in Windsor area of Weld County. (Burchett).

POTATOES, TOMATOES, PEPPERS

COLORADO POTATO BEETLE (*Leptinotarsa decemlineata*) - MARYLAND - Adults laying eggs on potatoes in Somerset and Worchester Counties. Counts less than 1 per 6 row feet in most fields. (U. Md., Ent. Dept.). VIRGINIA - Adults numerous in Accomack and Northampton Counties. Cool weather curtailed activity but first egg masses observed on April 27. (Hofmaster). OKLAHOMA - Adults on wild hosts in southern Noble County but no infestations reported on potatoes. (Okla. Coop. Sur.).

BEANS AND PEAS

PEA LEAF WEEVIL (*Sitona lineata*) - WASHINGTON - Adults abundant and severely notching 1 to 3-inch pea seedlings north and east of Colfax, lesser numbers south of Pullman, Whitman County; heavy in Spokane County. Most insecticide treatments successful. (Entenmann et al.). IDAHO - Field infestations, based on feeding injury to green peas and Austrian winter peas, greater in fields in Potlatch area of Latah County, compared with fields south of Moscow. Plants have outgrown feeding damage. Only 1 or 2 fields required treatment. (Futter, Portman).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - OKLAHOMA - Damage moderate to snap bean plants in southern Tulsa County before controls applied. (Okla. Coop. Sur.).

DECIDUOUS FRUITS AND NUTS

CODLING MOTH (*Laspeyresia pomonella*) - WASHINGTON - Adults collected in attractant traps, first adults May 10 in Tieton, Yakima County. (Gregorich, Johnson). COLORADO - Adults continue to increase in attractant and bait traps in Mesa County, counts as high as 30 per attractant trap. Tentative first cover spray. May 15. (Bulla).

ORIENTAL FRUIT MOTH (*Grapholitha molesta*) - COLORADO - Moth flights very light in Palisade, Vineland, and Orchard in Mesa County compared with same time in 1970. (Sisson, Anderson). NEW JERSEY - Adults 5 on sticky-board trap May 5-12 at Glassboro, Gloucester County. (Ins.-Dis. Newsltr.).

EYESPOTTED BUD MOTH (*Spilonota ocellana*) - MAINE - Larvae mining apple buds; injury light. (Gall).

GREEN PEACH APHID (*Myzus persicae*) - OREGON - Building up on peach trees in Ontario area, Malheur County. Leaf-rolling colonies noted in most trees of 500-tree orchard on May 7. About 20 percent of nymphs have wing pads of alate form. (Crowell, Henninger). COLORADO - Numerous in unsprayed peach and plum trees in Mesa County; 15-30 colonies per tree in heavier infestations caused curling of leaves. Heavier infestations mostly on backyard plantings. (Bulla, Sisson).

BLACK CHERRY APHID (*Myzus cerasi*) - UTAH - Spotty and curling sweet cherry foliage in Utah County. (Knowlton, Davis). Infestations more serious in Washington County cherry orchards (Huber); moderate in San Juan County (Jones).

PEAR PSYLLA (*Psylla pyricola*) - MASSACHUSETTS - Adults still deposting eggs; some eggs hatched in Hampshire and Hampden Counties. (Jensen). CONNECTICUT - Egg hatch underway in Tolland County. New eggs noted in New Haven and Tolland Counties on new foliage. (Savos, May 11). MICHIGAN - Eggs hatching, first-generation nymphs moving to new foliage in pear orchards from Berrien County north to Oceana County. (Thompson). WASHINGTON - Observations in Yakima County indicate early sprays gave inadequate control in many cases; petal fall applications applied to control immature forms. Mostly third and fourth instar nymphs present; first summer adults seen May 8. (Gregorich. Johnson).

SHOTHOLE BORER (*Scolytus rugulosus*) - OREGON - Damage severe in 6 to 7-year-old dwarf apple orchard in Sunnyside area, Clackamas County. Damage to young trees unusual; generally occurs only when hosts subjected to adverse climatic and/or cultural factors. (Capizzi).

PEARSLUG (*Caliroa cerasi*) - WASHINGTON - Hatched May 3 at Moxee, Yakima County. Widespread in one orchard, especially on Anjou pears. (Durrett).

EUROPEAN RED MITE (*Panonychus ulmi*) - MASSACHUSETTS - Overwintering eggs hatching in Hampshire and Hampden Counties. (Jensen). CONNECTICUT - Hatch of overwintered eggs about 40-60 percent in New Haven, Tolland, and New London Counties. (Savos, May 11). MICHIGAN - Winter eggs hatched May 10 as far north as Grand Rapids area. Young mites building up on new leaves. Will soon be too late for prebloom miticides on Red Delicious apples in southern counties. (Thompson).

PECAN NUT CASEBEARER (*Acrobasis caryae*) - TEXAS - First controls applied to most pecan orchards in Gonzales and Guadalupe Counties. Emergence erratic in some areas; may require second application. In Gonzales County, peak of egg laying reached. Eggs hatching in Bastrop and Travis Counties; spraying underway. Eggs hatching in Brazos, Bell, and Milam Counties. (Green).

PECAN LEAF PHYLLOXERA (*Phylloxera notabilis*) - TEXAS - Moderate in Madison County. Galls developed but not open. (Coster).

CITRUS

Insect Situation in Florida - End of April - CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 69 (norm 63) percent of groves; economic in 51 (norm 40) percent. Decreased in 37 percent and increased in 30 percent of groves. Statewide counts of number of leaves infested showed increase and population stayed above normal and in high range. Highest districts south, west, and north. Little change expected. CITRUS RED MITE (*Panonychus citri*) infested 47 (norm 49) percent of groves; economic in 24 (norm 19) percent. Population near normal and in moderate range. Increase expected and will result in heavy infestations in scattered groves. Highest districts south and central. TEXAS CITRUS MITE (*Panonychus citri*) infested 43 (norm 49) percent of groves; economic in 19 (norm 24) percent. Population in low range and slightly below normal. Increase likely to be rapid and cause heavy infestations in local areas. Highest districts south, central, and east. SIXSPOTTED MITE (*Eotetranychus sexmaculatus*) infested 9 percent of groves; economic in 2 percent. Statewide population near normal and low. Few heavy infestations will persist through May, then diminish. GLOVER SCALE (*Lepidosaphes gloverii*) infested 86 (norm 82) percent of groves; economic in 15 (norm 25) percent. Population slightly below normal but entered high range and will increase. Highest districts south, north, and west. PURPLE SCALE (*L. beckii*) infested 78 (norm 82) percent of groves; economic in 7 (norm 11) percent. Will stay below normal and moderate. Highest district north. CHAFF SCALE (*Parlatoria pergandii*) infested 49 (norm 64) percent of groves; economic in 2 (norm 11) percent. Will stay below normal and in low range despite slight increase. Highest district north. YELLOW SCALE (*Aonidiella citrina*) infested 36 (norm 64) percent of groves; economic in none (norm 9) percent. April population lowest since 1964 and will remain low. Highest district south. BLACK SCALE (*Saissetia oleae*) infested 11 (norm 26) percent of groves; economic in 3 (norm 10) percent. April population below normal and very low. Slight increase expected late May. Highest district west. An ARMORED SCALE (*Unaspis citri*) infested 29 percent of groves; economic in 20 percent. Expect increase. WHITEFLY adults in 93 percent of groves; eggs on new leaves in 78 percent of groves; 60 percent of groves have larvae on new leaves in normal moderate numbers. Expect increase. MEALYBUGS in 3 percent of groves. Will become more abundant in May and some heavy infestations expected by June. (W.A. Simanton (Citrus Expt. Sta., Lake Alfred)).

SMALL FRUITS

STRAWBERRY LEAFROLLER (Ancylis comptana fragariae) - MARYLAND - Heavy, controls required in 2 acres of strawberries near Salisbury, Wicomico County. (U. Md., Ent. Dept.).

CRANBERRY GIRDLER (Chrysoteuchia toparia) - IDAHO - First adult flight noted at Moscow, Latah County. (Barr).

FOREST AND SHADE TREES

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - MARYLAND - Adults laying eggs in Prince Georges, Montgomery, and Anne Arundel Counties. (U. Md., Ent. Dept.).

EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - MISSOURI - Pupation underway in Jackson County. Total of 100 forms collected and 34 pupated. (Hanning)

PINE SPITTLEBUG (Aphrophora parallela) - MISSISSIPPI - Light on loblolly pine saplings in Oktibbeha County. (Sartor). TENNESSEE - Light on pines in Henderson County. No damage observed. (Turpen). WISCONSIN - Spittle masses evident on white pines in Richland County. (Okla. Coop. Sur.).

EUROPEAN PINE SAWFLY (Neodiprion sertifer) - IOWA - Larvae caused defoliation on Scotch pine at Moravia, Monroe County; 10 larvae per 6-inch candle. (Iowa Ins. Sur.). MICHIGAN - First eggs hatched May 6 in Cass County. (Flink). No hatch reported in central area. (Wallner).

EASTERN TENT CATERPILLAR (Malacosoma americanum) - MARYLAND - Heavy throughout Frederick, Montgomery, Prince Georges, Anne Arundel, Baltimore, and Harford Counties. Fourth instars migrating in central and southern counties. First and second instars heavy on wild cherry in Garrett, Allegany, and higher elevations of Washington County. Population levels in these western counties heaviest within past several years. (U. Md., Ent. Dept.).

FOREST TENT CATERPILLAR (Malacosoma disstria) - MISSOURI - Collected from black-jack oak in Dent County by W.H. Kirby May 11, 1971. Determination by W.H. Kearby. (Hanning).

SPRING CANKERWORM (Paleacrita vernata) - TENNESSEE - Heavy on hackberry and other trees with heavy damage in central areas. Control applications impossible in most cases. (Gordon). OKLAHOMA - Heavy on shade trees in Lincoln County and on elms in Payne County. Moderate to heavy on hackberry in Murray County and moderate on Siberian elms in Major County. (Okla. Coop. Sur., Apr. 30). This note replaces note in CEIR 21(19):325. (PPD). KANSAS - Survey in Topeka, Shawnee County, showed nearly complete defoliation of American and Chinese elms in many areas throughout city; several city blocks involved in each area. Defoliation 25+ percent in other areas. Defoliation 20-70 percent to hackberry and occasionally walnut and pin oaks. Most larvae pupating in Topeka and at Manhattan, Riley County. (Bell). WISCONSIN - Eggs hatched and larvae feeding on elms in western Dane County. (Wis. Ins. Sur.).

ASH BORER (Podosesia syringae fraxini) - NORTH DAKOTA - Larvae in 50-75 percent of boulevard ash trees at Minot Air Force Base in Ward County. Pupating May 5 in McLean County. (McKnight, Stein).

NATIVE ELM BARK BEETLE (Hylurgopinus rufipes) - NORTH DAKOTA - Adults collected under bark of American elm in Burleigh and Emmons Counties for new county records. (Brandvik).

BIRCH LEAFMINER (Fenusa pusilla) - MICHIGAN - Adults laying eggs although recent cool weather will delay hatch. (Wallner).

MAN AND ANIMALS

SCREWWORM (*Cochliomyia hominivorax*) - Total of 7 cases reported in U.S. May 9-15 as follows: TEXAS: Hidalgo, Pecos, Starr, Zapata, Cameron, Webb, and Wilson. Total of 46 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico as follows: Sonora 17, Chihuahua 3, Nuevo Leon 14, Tamaulipas 12. Total of 11 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screwworm flies released: Texas 44,878,000; Arizona 3,310,000; Mexico 111,688,000. (Anim. Health Div.).

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Adults in Payne County. (Okla. Coop. Sur.).

FACE FLY (*Musca autumnalis*) - MARYLAND - Moderate to heavy on unsprayed horses, beef, and dairy cattle. Counts in Garrett, Allegany, Washington, and Montgomery Counties ranged as high as 20-40. (U. Md., Ent. Dept.). INDIANA - Adults averaged less than 1 per animal in 7 central district counties. (Sanders). NEBRASKA - None found in 2 herds examined in Cherry and Lincoln Counties. (Campbell, May 11).

HOUSE FLY (*Musca domestica*) - OKLAHOMA - Averaged 1 or 2 per Scudder grid in untreated barns in Payne County. Probably due to cool, rainy weather first part of week. (Okla. Coop. Sur.).

HORN FLY (*Haematobia irritans*) - INDIANA - Adults averaged fewer than 10 per animal in 7 central district counties. (Sanders). NEBRASKA - Some light activity noted in Cherry and Lincoln Counties; ranged 0-10 per animal in 2 herds checked. (Campbell, May 11). OKLAHOMA - Averaged 500 per head on cattle in Major County, ranged up to 2,000 per head in Garfield County. Heavy in Noble County, moderate in Craig and Cleveland Counties. (Okla. Coop. Sur.). UTAH - Adults light on cattle in warmer areas of Juan County. (Jones).

STABLE FLY (*Stomoxys calcitrans*) - OKLAHOMA - Averaged 3 per head on dairy cattle in Payne County. (Okla. Coop. Sur.).

SHEEP KED (*Melophagus ovinus*) - UTAH - Moderate to heavy on range sheep during shearing time in San Juan County. (Jones).

MOSQUITOES - CALIFORNIA - *Aedes nigromaculis* and *Culex tarsalis* may be very serious problem in some areas this summer due to resistance to pesticides. (Cal. Coop. Rpt.). UTAH - Mosquitoes above normal due to spring rains. Annoyance severe in parts of Millard County, moderate in San Juan County. (Knowlton, Jones). INDIANA - Third-stage *Aedes vexans* larvae averaged less than 1 per dip in ditch in Delaware County. Fourth-stage *Culiseta inornata* still present in Vigo County. Determined by D. Sanders. (Meyer).

BLACK FLIES - MARYLAND - Mostly *Simulium venustum* annoying in many mountain areas of Frederick, Montgomery, Washington, Allegany, and Garrett Counties. Ranged 5-20 per person in many areas. (U. Md., Ent. Dept.).

A BITING MIDGE (*Leptoconops kerteszi*) - NEVADA - Adult emergence heavy week of May 7. Adults currently very heavy and causing extreme annoyance to humans in Black Rock, Granite Creek, and Smoke Creek Deserts of Humboldt, Pershing, and Washoe Counties. (Lukens).

AMERICAN DOG TICK (*Dermacentor variabilis*) - KENTUCKY - Heavy in central suburban areas. Three nymphs per hundred sweeps in pasture fields in Morgan County. (Barnett). TENNESSEE - Heavy in east and central areas. In Williamson County, ticks reported very heavy in pasture on farm and populations heavy enough to cause damage to cattle. Controls planned. (Bruer, Quillin). OKLAHOMA - Common on dogs in Payne and Noble Counties. (Okla. Coop. Sur.).

ROCKY MOUNTAIN WOOD TICK (*Dermacentor andersoni*) - WYOMING - Adults heavy on rangeland near Shoshoni, Fremont County. (Lavigne). IDAHO - Heavy at Twinn Falls, Twin Falls County, April 25. Male and female taken from man west of St. Anthony, Fremont County, May 5. (Peebles, Sutherland).

HARD BACKED TICKS - OKLAHOMA - *Amblyomma americanum* (lone star tick) heavy on man and livestock in Mayes County. (Okla. Coop. Sur.). IDAHO - *Dermacentor albipictus* (winter tick) caused near-death of mule at Squirrel, Fremont County. Determined by J. Keirens. (Peebles, Sutherland, Apr. 23).

STORED PRODUCTS

INDIAN MEAL MOTH (*Plodia interpunctella*) - PENNSYLVANIA - Moderate in stored cocoa beans in Centre County. (Gesell).

BENEFICIAL INSECTS

ICHEUMONID WASPS (*Bathyplectes* spp.) - INDIANA - Single *B. curculionis* taken from 22 *Hypera postica* (alfalfa weevil) larvae collected in southeast district; 251 *H. postica* larvae collected in 4 south-central counties yielded 28 *B. curculionis* (11.2 percent parasitism); 404 *H. postica* larvae from 6 southwest counties yielded 167 *B. curculionis* (41.3 percent parasitism). Percent parasitism ranged 3.8-34.2 in south-central districts, 0-100 in southwest districts. Of 5 parasites emerging from 88 *H. postica* larvae collected in Crawford County field, 3 determined *B. anura*; 59 *H. postica* larvae collected in Lawrence County field yielded 4 parasites including 1 *B. anura*. These are new county records for *B. anura*. (Meyer). ILLINOIS - *B. curculionis* parasitized 9.14 percent of *H. postica* larvae collected April 26-30 in southwest district, 12.86 percent in southeast district. (Ill. Ins. Sur.).

A PTEROMALID WASP (*Pteromalus venustus*) - SOUTH DAKOTA - Specimen taken from nest of *Megachile rotundata* (alfalfa leafcutter bee) at Brookings, Brookings County, by R.J. Walstrom on March 29, 1971. Determined by B.D. Burks. This is a new State record. Recorded from Idaho, Utah, and Ontario. Old World species identified from North America since 1968. (Jones, Walstrom).

CONVERGENT LADY BEETLE (*Hippodamia convergens*) - KANSAS - Adult populations generally heavy in alfalfa surveyed. Counts per 10 sweeps ranged as follows by county (3 fields per county unless otherwise indicated): Lyon 25-51; Marshall 10-30; Nemaha 18-20 (2 fields); Brown 10-20; Doniphan 20-30 (2 fields); Atchison 20-30 (2 fields); Jefferson 10-40; and Leavenworth 30 (1 field). (Bell).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

CEREAL LEAF BEETLE (*Oulema melanopus*) - ILLINOIS - Adult collected on wheat in Putnam County by R.L. Lovejoy on May 4, 1971. KENTUCKY - Adult collected on oats in Bell County by J.H. Milner on May 5, 1971. Determinations by R.E. White. These are new county records. (PPD). OHIO - Adults mating and laying eggs in Tuscarawas County. Up to 4 adults (average 1) per sweep in wheat. Few eggs on oats although oviposition starting. No larvae observed. (Treece). NEW YORK - First adults of season found May 7 in Cattaraugus County on native grasses and weeds growing in stubble of 1970 wheatfield. (N.Y. Wkly. Rpt.).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - TEXAS - Extension of infested area found about 0.5 mile outside city limits of Brownsville, Cameron County. Control operations continue. Second control application made to some areas. (PPD).

EUROPEAN CHAFER (*Amphimallon majalis*) - NEW YORK - Third instars 1+ per square foot at Accord, Ulster County; also in alfalfa fields 2 miles from apparent center at Whitfield Cemetery and in play yard at Accord Village school on May 4. Other species dug at Accord Village include *Popillia japonica* (Japanese beetle) third and second instars and *Macrodactylus subspinosus* (rose chafer) third instars; no injury at remote sites. Surveys negative for *A. majalis* 2+ miles from Whitfield Cemetery. (N.Y. Wkly. Rpt., May 10).

FORMOSAN SUBTERRANEAN TERMITE (Coptotermes formosanus) - LOUISIANA - Trapped 4 specimens in blacklight traps at Algiers Naval Base, Orleans Parish, during April. First flight of season noted. (PPD South. Reg.).

A GRASS BUG (Labops hesperius) - OREGON - Nymphal populations heavy in improved pastures of intermediate and crested wheatgrasses in Baker area, Baker County; 800-900 acres reported infested. Surveys in late April indicated populations of 20-40 nymphs per square foot in more favorable habitats. (Kamm). UTAH - This species and Petrobia latens (brown wheat mite) continue to damage range planted grasses in "Dixie" area of Washington County. (Huber, Knowlton).

GRASSHOPPERS - NORTH DAKOTA - Hatch light in Burleigh County; up to 4 Melanoplus sanguinipes first instars per square yard in road ditches. M. bivittatus eggs in eye-spot and segmented stages, M. differentialis eggs coagulated in Morton, Emmons, and Burleigh Counties. (Brandvik).

GYPSY MOTH (Porthetria dispar) - FLORIDA - Larvae found in Pensacola, Escambia County, mobile home park May 5. Infestation originated from infested mobile home moved into State late in 1970. Trailer had been under surveillance since it was known to be infested with egg clusters at origin and destination. Larvae, about fourth or fifth instar, detected in larval traps on several live oak trees. About 150 acres treated because of threat of spread by larvae. Eradication of this regulatory interception being attempted. Plans formulated for intensive sex attractant trapping throughout area. (PPD). NEW JERSEY - Extremely heavy infestations in some Monmouth County areas present serious threat to blueberry fields surrounded by deciduous trees. Oak trees adjacent to one field contained hundreds of egg masses, each containing 300-800 eggs. These eggs started to hatch May 10; by May 12 windblown tiny larvae were distributed throughout field. Packing shed about 40 yards from woods had 50+ larvae per square foot crawling on it on May 12. (Ins.-Dis. Newsltr.). NEW YORK - One egg mass found newly hatched May 3 at Sprout Lake Campgrounds, Peekskill, Rockland County. (N.Y. Wkly. Rpt.). PENNSYLVANIA - First egg hatch in Northampton County May 4. Eggs about 50 percent hatched at lower elevations in Berks and Schuylkill Counties May 7. (Jeffery). RHODE ISLAND - First egg hatch in Kent and Washington Counties, May 5. (LaFrance, Relli). NEW HAMPSHIRE - First observed egg hatch May 12 at Eaton, Carroll County; this on lower portions of trees (1-2 feet above ground). Egg masses higher up not hatching. (Mason). Egg-hatch survey conducted at several locations in Carroll, Grafton, Belknap, Merrimack, and Strafford Counties indicates winter survival of 15.5 percent. (Blickle).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - ALABAMA - Destroyed about 5 percent of young corn plants in 5-acre field at Mineola, Monroe County. (Lemons).

JAPANESE BEETLE (Popillia japonica) - VIRGINIA - Larval damage severe to 50 percent of 75 acres of orchard grass and clover pasture in Franklin County. (Allen, Apr. 28). RHODE ISLAND - Larvae within 1-2 inches of surface feeding on grass roots. (Stelle, May 5).

MEXICAN FRUIT FLY (Anastrepha ludens) - TEXAS - Adult collected in grapefruit tree at Eagle Pass, Maverick County, by N.M. Moritz, April 23, 1971. Determined by G. Steyskal. This is a new county record. Several larvae collected in mango fruit in grocery store at Brenham, Washington County, by B.B. Smith May 3. (PPD).

MORMON CRICKET (Anabrus simplex) - UTAH - Surveys negative in previously infested area in Tooele County. (Thornley).

ORIENTAL WOOD BORER (Heterobostrychus aequalis) - FLORIDA - Adults heavy in small wooden horse in home at Coral Gables, Dade County. (Humphries, McHenry, May 7).

PINK BOLLWORM (Pectinophora gossypiella) - FLORIDA - Collected 9 larvae and 1 pupal skin on wild cotton in woods near Tavernier, Monroe County, April 22. Determined by V.H. Owens. (Creamer). CALIFORNIA - Sterile moth releases in Kern County totaled 3,455,500 for period May 7-13. To date 6,454,500 moths released. (PPD).

WHITEFRINGED BEETLES (*Graphognathus* spp.) - ALABAMA - Larvae killed about 3 percent of corn plants in 20-acre field at Mineola, Monroe County. Additional damage caused by *Euetheola rugiceps* (sugarcane beetle). (Lemons). GEORGIA - Moderate larval infestation on corn in Worth County. (Williams, French, May 8). FLORIDA - Larvae medium to heavy on corn at Caryville, Holmes County, May 3. (Tipton).

HAWAII INSECT REPORT

General Vegetables - LEEK MOTH (*Acrolepia assectella*) larvae and/or pupae averaged 3 per plant in backyard planting of green onions at Ewa, Oahu. (Au). CARMINE SPIDER MITE (*Tetranychus cinnabarinus*) generally trace in 0.1 acre of *Pisum sativum* (Chinese peas) and 0.25 acre of eggplant at Kahaluu, Oahu. Moderate on 10 percent of pea leaves; averaged 25 per square inch. Light in 0.1 acre of eggplant at Kahului, Maui; averaged 5 per square inch. (Miyahira, Kawamura). Late instar nymphs of SOUTHERN GREEN STINK BUG (*Nezara viridula*) trace in one acre of soybeans at Waimanalo, Oahu. Adults light in backyard planting of yardlongbeans at Ewa, Oahu; a TACHINA FLY (*Trichopoda pennipes*) light. (Au, Kawamura).

Fruits and Nuts - COCONUT LEAFROLLER (*Hedylepta blackburni*) larvae trace on 50+ coconut trees at Hawaii Kai, Oahu; moderate on 50+ coconut seedlings at Waimanalo Beach Park, about 90 percent of plants heavily damaged. Generally light on same host in leeward areas of Oahu; heavy on 5 trees at Makaha, pinnae almost completely skeletonized. Examined 4 coconut trees each for larval and parasite incidence at Kapaa, Lydgate Park, and Wailua Golf Course on Kauai. Total of 339 *H. blackburni* larvae and pupae, 112 hymenopterous and 73 dipterous parasite cocoons noted at Wailua Golf Course. (Au, Mitchell, Kawamura). HAWAIIAN THRIPS (*Taeniothrips hawaiiensis*) moderate to heavy on macadamia flowers at Pahala, Hawaii. Ranged 150-420 (averaged 301) per raceme on total of 70 racemes sampled. (Mitchell). COCONUT SCALE (*Aspidiotus destructor*) light to moderate on 50+ coconut trees at Hawaii Kai, Oahu; *Telsimia nitida* and *Lindorus lophanthae* (lady beetles) light amid scale colonies. Light in mockorange (*Murraya peniculata*) hedge at Aliamanu, Oahu; about 5 percent of leaves affected. This is a new host record. (Kashiwai).

Man and Animals - TROPICAL FOWL MITE (*Ornithonyssus bursa*) infestation in apartment at Honolulu, Oahu, apparently originated from mynahs nesting in attic. Resident required medical treatment for dermatitis. (Radovsky). Trapped 1,517 VEXANS MOSQUITO (*Aedes vexans nocturnus*) and 1,836 SOUTHERN HOUSE MOSQUITO (*Culex pipiens quinquefasciatus*) in 55 light traps on Oahu during April. *Aedes* up to 1,106 per trap at Kahaluu. *Culex* up to 332 per trap at Kawailoa. (Mosq. Cont. Br., Dept. of Health).

DETECTION

New State Record - A PTEROMALID WASP (*Pteromalus venustus*) SOUTH DAKOTA - Brookings County. (p. 363).

New County Records - ALFALFA WEEVIL (*Hypera postica*) OKLAHOMA - Alfalfa. TEXAS - Bell. KANSAS - Lyon, Marshall, Brown, Doniphan, Atchison, Jefferson, and Leavenworth (p. 357). CEREAL LEAF BEETLE (*Oulema melanopus*) ILLINOIS - Putnam. KENTUCKY - Bell (p. 363). AN ICHNEUMON WASP (*Bathyplectes anura*) INDIANA - Crawford, Lawrence (p. 363). MEXICAN FRUIT FLY (*Anastrepha ludens*) TEXAS - Maverick (p. 364). NATIVE ELM BARK BEETLE (*Hylurgopinus rufipes*) NORTH DAKOTA - Burleigh and Emmons (p. 361).

LIGHT TRAP COLLECTIONS

	Tempera-ture °F.	Precip-itation (inches)	Type of trap (BL = blacklight, I = incandescent, MV = mercury vapor, O = other)	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 5/7-13			BL					6	1									1	1	4		1		
IOWA																								
Napier 5/8-14			BL	2														2	8			1		
KANSAS (County)																								
Barton 5/6-12			BL	2		2												2	9					
KENTUCKY																								
Lexington 5/5-12			BL																68					
MISSISSIPPI																								
Stoneville 5/7-13	48-83	7.01	BL	11	1			5		9								2	3			3		
MISSOURI (County)																								
Greene 5/6-12			BL	5														7	40			3		
NORTH CAROLINA																								
Beaufort 5/7-14	65		BL	2						3									2					
TENNESSEE (County)																								
Franklin 5/10-14			BL	6	7					17									17					
Hardeman 5/10-14			BL					1		8							4	3				1		
Haywood 5/10-14			BL														10	1	5					
Madison 5/10-14			BL					2										1	3					
TEXAS																								
Waco 5/7-13			BL	53				72										13	9	22		13	2	
WISCONSIN																								
Lancaster 5/7-12			BL																1					

Weather of the week continued from page 354.

By the weekend, rains were tapering off in the Northeast, but heavy showers fell along the middle and southern Atlantic coast and over the Florida Peninsula. Florida rainfall averaged over 2 inches and many areas received 3-4 inches. Generous rains relieved the intense drought which has persisted in southern Florida for several months. Parts of Texas received showers during the week. Soil moisture is now adequate in east Texas and the beachlands. Drought continues over the remainder of State.

TEMPERATURE: Mild weather prevailed over the South early in the week, with afternoon temperatures mostly in the 80's from California to Florida. Spots in the southwestern deserts and in Florida warmed to the 90's. Thermal, California, registered 99° Wednesday afternoon, when the mercury at Orlando, Florida, reached 95°. The northern Great Plains warmed to the 70's and the 80's by midweek. Glasgow and Miles City in Montana registered 90° on Thursday afternoon. Spots in the Rocky Mountains dropped to freezing on several mornings. Grants, New Mexico, recorded 28° Monday morning. Northerly breezes brought cooler weather to mid-America by Wednesday and Thursday. Dodge City, Kansas, registered 32° Wednesday morning and Peoria, Illinois, recorded 30° Thursday morning. Pleasant temperatures prevailed over most of the Nation over the weekend. Grand Forks, North Dakota, registered 86° Sunday afternoon. A few spots in Texas and the Southwest warmed to 100°. Warmest spots were Blythe, California, and Wink, Texas, where the mercury reached 111°. Temperatures averaged above normal from southern California to Minnesota and Upper Michigan, and below normal from the central and southern Rocky Mountains to the Atlantic Ocean. (Summary supplied by Environmental Data Service, ESSA.)

IMPROVED TRAPS FOR CAPTURING BOLL WEEVILS

W.H. Cross, J.E. Leggett, and D.D. Hardee 1/ 2/

Large numbers of male or pheromone-baited traps for capturing of boll weevils (Anthonomus grandis Boheman) have been employed for the past several years in survey and control programs of the Entomology Research and Plant Protection Divisions, ARS, USDA, and other agencies. Results of a series of tests conducted at the Boll Weevil Research Laboratory determined colors most attractive to the boll weevil, as well as more efficient and economical trap designs. From 1966 through 1968, a Stikem® (Michel and Pelton Co.) 3/ coated plywood wing trap painted John Deere Green (Mobile Paints B.L.P. Rus-Kil), and an oblique funnel live trap were used in a variety of circumstances and determined to be the best designs for capturing boll weevils (USDA Coop. Econ. Ins. Rpt. 18(20):430, 1968; J. Econ. Ent. 62(1):154-61, 1969, J. Econ. Ent. 63(4):1041-48, 1970).

Results of tests in 1968 indicated that white or bright yellow traps were more attractive to boll weevils than the darker green traps. In 1969, the 2 Divisions jointly contracted for construction of 40,000 metal wing traps, 30 cm wide x 25.4 cm high, painted Canary Yellow (Sherwin-Williams Co.), but otherwise changed little from the original trap (Fig. 1). The traps were used in 1969 and 1970 in survey and control programs and to further test design and color. An approximate 3-fold increase in response by boll weevils was obtained in 1970 when the metal wing trap was repainted with a flat white undercoat and then with daylight fluorescent Saturn Yellow (Day-Glo Color Corporation). Boll weevils as well as many other insects are greatly attracted by the intensively reflective daylight fluorescent pigments with peak emission in the 525 mµ region of the spectrum.

Tests conducted late in 1970 with traps of several shapes made from plastic-impregnated paper half-gallon cartons resulted in the development of a disposable and more economical trap. A trap of a foldout design (Figs. 2 and 3), 19 cm wide x 25.5 cm high, was constructed by trimming unformed cartons and stapling 2 inside out and back to back to form 4 wings. Saturn Yellow paint mixed 3:1 with turpentine was rolled on the inner white surface of the cartons before stapling. Stikem® or Tack-Trap® (Animal Repellents, Inc.) under pressure was applied to the wings with a flange nozzle tip 8 cm wide. Results of preliminary tests indicated that the daylight fluorescent pigment may be blended (1:20) in the adhesive and applied to unpainted traps. Traps pretreated with adhesive may be folded, clipped together, and packed in boxes for later field use. For use, traps may be attached to stakes over wire loops (Fig. 3) or slipped over a cross-cut stake by notching the inside bottom corners of the trap. The wire clip lure holder is designed to clamp the wings together at the top. A live trap, several times more efficient than the oblique funnel trap used previously, was constructed from a cylindrical 1 gallon carton (Fig. 4). The bottom of the carton is pushed out and a screen funnel with a 0.5 cm aperture and attached plastic-impregnated paper wings is stapled in. The top is cut out of the lid and is replaced with a clear plastic disc sealed to the lid with a tub and tile caulking compound. Sheet metal brackets are attached to the carton with heavy staples to fit a reinforcing rod or a similar stake for supporting it. Saturn Yellow paint is rolled on the wings before the trap components are assembled. The carton may be painted Saturn Yellow for a larger yellow silhouette or a red color to repel weevils from this part of the trap.

1/ Entomology Research Division, Agr. Res. Serv., USDA, State College, Mississippi.

2/ Assistance of F.J. Benci in preparation of the figures is acknowledged.

3/ Trade names used in this article are solely for the purpose of providing specific information. This does not constitute a guarantee or warranty of the product by the U.S. Department of Agriculture over other products not mentioned.

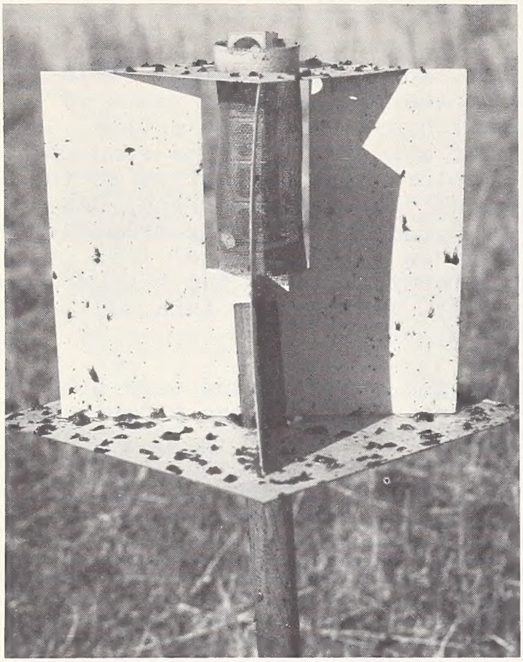

Fig. 1 Metal wing trap baited with isolated male weevils.

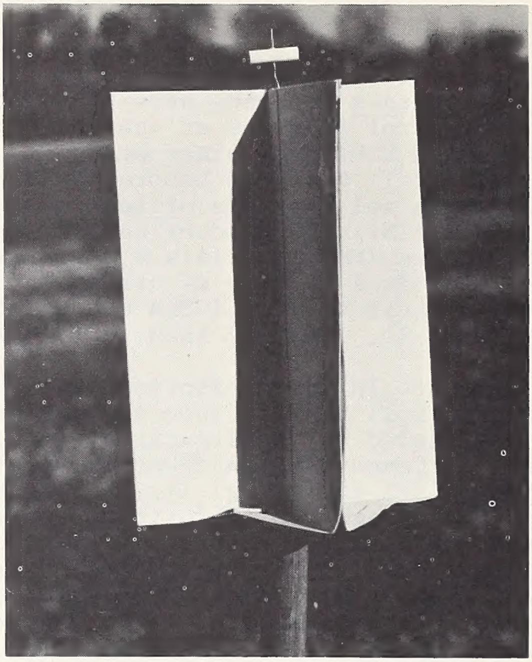

Fig. 2 Foldout paper wing trap baited at top with grandlure, a synthetic pheromone, on a cigarette filter.

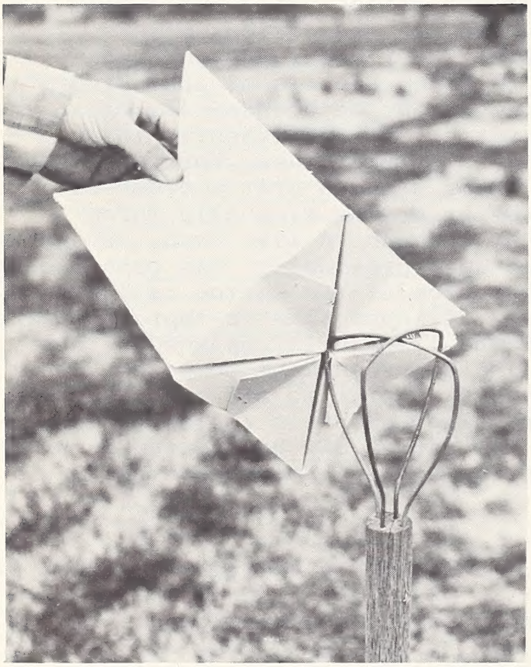

Fig. 3 Foldout paper wing trap being placed over perpendicular wire loops for attachment to stake.

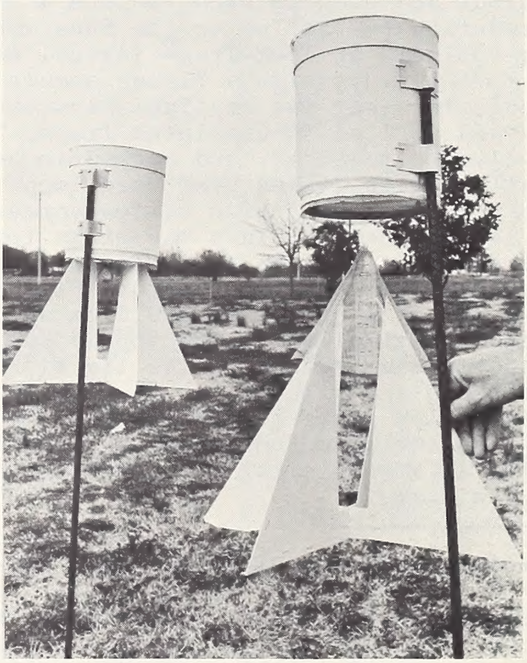

Fig. 4 Background: Complete gallon carton live trap. Foreground: Screen funnel and paper wing unit separated.

U.S. Dept. Agr.
Coop. Econ. Ins. Rpt.
21(21):367-368, 1971

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